



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/364,256	07/30/1999	EDDIE SINES	79.955	9195

7590 08/12/2003

ASSOCIATE COUNSEL PATENTS
CODE 1008.2
NAVAL RESEARCH LABORATORY
4555 OVERLOOK AVENUE SW
WASHINGTON, DC 20375-5325

EXAMINER

PEREZ, GUILLERMO

ART UNIT	PAPER NUMBER
----------	--------------

2834

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/364,256		SINES, EDDIE	
	Examiner		Art Unit	
	Guillermo Perez		2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oigawa (EP 0462005) in view of Fitter (U. S. Pat. 4,897,626).

Oigawa discloses a method for cooling electrical devices (figure 6) having layers of electrically conductive material (101) wound on a core (211) comprising the steps of:

- placing a thermally conductive strip (110) having a first end and a second end, capable of conducting heat from between layers of the electrically conductive material (101), with the strip (110) extending through at least some of the layers of electrically conductive material (101) wound on the core (211) with both the first end and the second end extending outside of an area covered by the layers of electrically conductive material (101); and
- conducting the heat from the layers of electrically conductive material (101) through the first and second ends of the thermally conductive material (110) thereby cooling the electrical device.

Oigawa discloses the step of placing the thermally conductive strip (110) having a first and second end between a plurality of predetermined laminations (109) of the core.

Oigawa discloses a method for cooling an electrical device having layers of electrically conductive material (101) wound on to a laminated core (211) having a heat-generating component (104) comprising the steps of:

- placing one or more flat, thermally conductive strips (110) in contact with the heat generating component (104) across its entire length, each of the thermally conductive strips (110) extending outside of the area covered by the electrically conductive material (101) and core (211) and in physical contact with the electrically conductive material (101), thereby receiving heat from the electrically conductive material (101), and
- removing heat from a first end and a second end of each of the thermally conductive strips (110).

However, Oigawa does not disclose that the thermally conductive strips are of a non-metallic material. Oigawa does not disclose that the first and second ends of the non-metallic thermally conductive strip extending outside the core.

Fitter discloses that the thermally conductive strips (40) are of a non-metallic material (column 2, lines 28-30). Fitter discloses that the first and second ends of the non-metallic thermally conductive strip (40) extending outside the core (46,48). Fitter's invention has the purpose of improving thermal conductivity in the coils.

Art Unit: 2834

It would have been obvious at the time the invention was made to modify the method of Oigawa and provide it with the non-metallic strips configuration disclosed by Fitter for the purpose of improving thermal conductivity in the coils.

2. Claims 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oigawa in view of Fitter and further in view of Jarczynski (U. S. Pat. No. 5,091,666).

Oigawa discloses an electric motor (figure 6) comprising;

one or more laminations of a metallic material (109) forming an outer casing of the electric motor;

one or more flat, thermally conductive disks (110) positioned between the laminations (109) for conducting heat generated by an electrical current flowing within the motor through the conductive disks (110);

an electrically conductive material (101) wound in a plurality of layers within the laminations (109) so as to form an electric field that drives an armature when an electrical current is applied;

thermally conductive strips (110) interleaved between preselected layers of the electrically conductive material (101), the thermally conductive strip (110) extending outside of the area covered by the electrically conductive material (101); and

means for conducting heat at the end of each of the non-metallic thermally conductive disks and the thermally conductive strips (110) thereby cooling the motor.

Art Unit: 2834

Fitter discloses that the thermally conductive strips are of a non-metallic material (column 2, lines 28-30). Fitter's invention has the purpose of improving thermal conductivity in the coils.

Jarczynski discloses means (46, 26, 28) for conducting heat at the end of the conductive disk and strips (36). Jarczynski discloses one or more thermo-coolers (26,28,46) adjacent to and touching the outer casing of the motor (24) to conduct heat from the metallic laminations (34) forming the outer casing of the motor. Jarczynski's invention has the purpose of removing heat created in the motor structure towards the atmosphere.

It would have been obvious at the time the invention was made to modify the electric motor of Oigawa and provide it with the non-metallic thermally conductive strips disclosed by Fitter. It would have also been obvious to provide the electric motor of Oigawa with the means for conducting heat disclosed by Jarczynski for the purpose of improving cooling performance in the stator structure, dissipating heat from the coils, and removing heat created in the motor structure towards the atmosphere.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the thermally conductive strips in the stator core or in the windings of a non-metallic material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Response to Arguments

Applicant's arguments with respect to claim 21 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Fitter teaches the use of non-metallic, flat, thermally conductive materials (ceramic) as an alternative in the invention to dissipate heat from an electrical device like the one shown by Oigawa to simplify and reduce the cost of the mentioned electrical device. Both references are concerned with and address the removal of heat from electrical devices, as claimed.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *"the strips 40 (Fitter) and the plates 109 and 110 (Oigawa) are not capable of dissipating sufficient heat through just the ends"; "only the ends of the thermally conductive material are used to effect heat dispersion and cool the device"* emphasis added) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to Applicant's remark that there "is no heat radiating or thermally conductive material placed between the layers that are wound up to form the coil", it must be noted that Oigawa discloses on column 6, lines 52-57 that the coil 104 has the plate 110 placed between the two layers forming the coil 104.

In response to Applicant's remark that Fitter does not disclose that the thermally conductive strips are of a non-metallic material, it must be noted that those limitations are disclosed on column 2, lines 28-30.

In response to Applicant's argument that Fitter includes additional structure ("Fitter specifically calls for a ceramic material") not required by Applicant's invention, it must be noted that Fitter discloses the invention as claimed. The fact that it discloses additional structure not claimed is irrelevant. Fitter teaches the use of thermally conductive strips (40) of a non-metallic material, as claimed.

In response to Applicant's argument that in contrast to Jarczynski, "the present invention provides thermally conductive strips for cooling the motor, while the use of a thermo-cooler placed adjacent to the motor casing is an option if additional cooling is desired", it must be noted that Jarczynski addresses the "means for conducting heat" as defined on pages 6-9 of the specification.

The Examiner believes that the references teach the claimed invention.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Art Unit: 2834

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
August 8, 2003

Thomas M. O'Leary
August 8, 2003